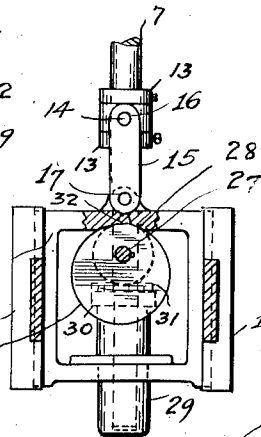
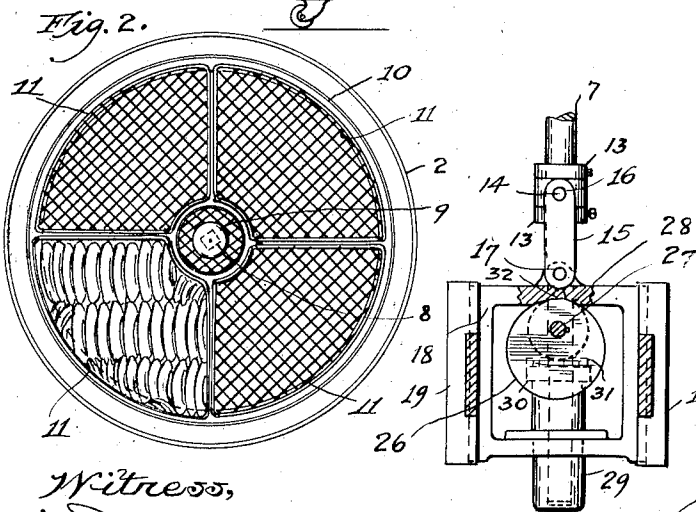
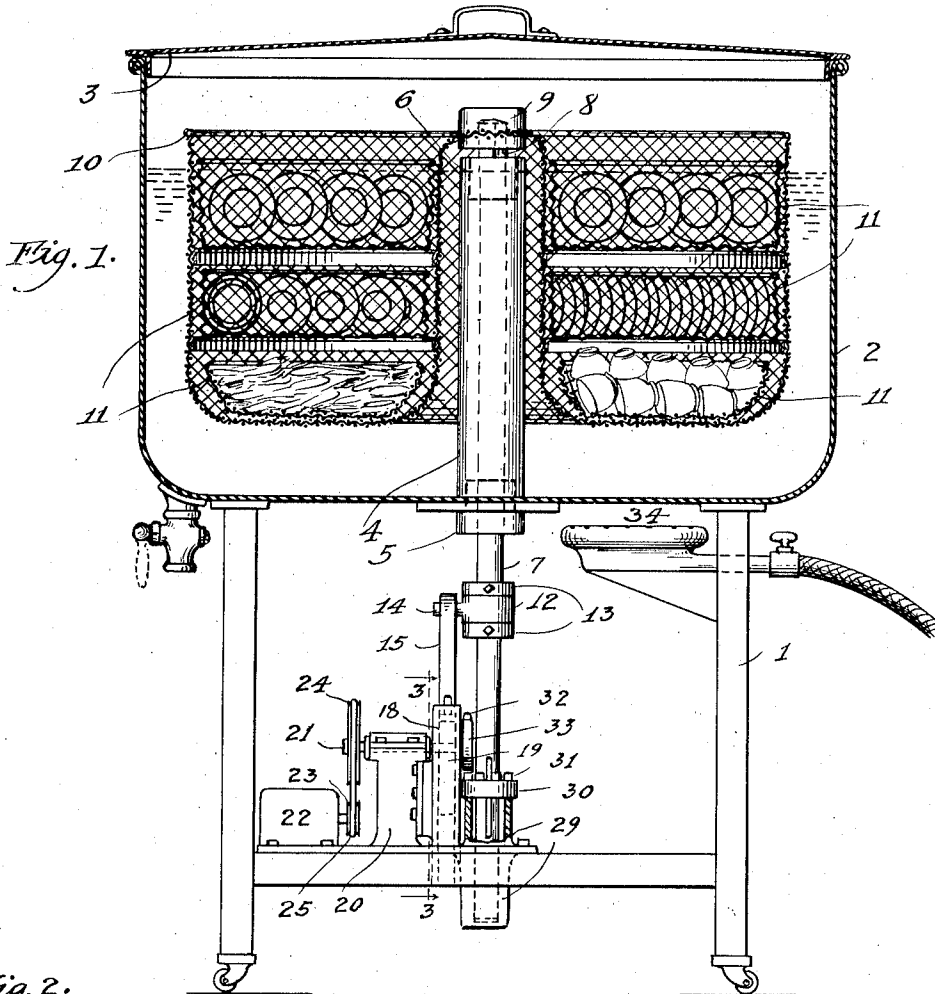


J. T. BELKNAP,
DISH WASHING APPARATUS.
APPLICATION FILED APR. 16, 1919.

1,345,059.

Patented June 29, 1920.



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UNITED STATES PATENT OFFICE.

JANE T. BELKNAP, OF GLENCOE, ILLINOIS.

DISH-WASHING APPARATUS.

1,345,059.

Specification of Letters Patent. Patented June 29, 1920.

Application filed April 16, 1919. Serial No. 290,475.

To all whom it may concern:

Be it known that I, JANE T. BELKNAP, a citizen of the United States, residing in the city of Glencoe, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Dish-Washing Apparatus, of which the following is a specification.

This invention relates to improvements in dish washing apparatus and has among its salient objects to provide a construction in which the dishes or utensils being washed are simultaneously bodily reciprocated and rotated in the cleansing fluid; to provide a construction in which the utensils being washed are placed in a rack or cage detachably mounted on a constantly reciprocating and rotating spindle or shaft whereby sufficient agitation of the cleansing fluid is obtained to thoroughly clean said utensils; to provide a construction which is devoid of parts difficult to clean or complicated in operation, and in which the water for cleansing and rinsing can be maintained at any desired temperature, and in general to provide an improved construction of the character referred to.

In the drawings—

Figure 1 is a vertical side elevation, partly in section of my improved device.

Fig. 2 is a plan view of the rack or cage.

Fig. 3 is a detail view taken on lines 3—3 of Fig. 1 and looking in the direction of the arrows.

Referring to the drawings—1 designates a suitable frame on which is mounted a water tight tank 2 provided with a cover 3. The tank which is or may be cylindrical in shape is provided with a centrally disposed vertically extending sleeve 4 having water tight bearings 5 and 6. In these bearings is rotatably mounted a shaft or spindle 7, the upper end 8 of which projects through the bearing member 6, and is squared as shown to receive the hub 9 of the dish rack 10. This rack 10 is provided with a plurality of removable baskets 11 mounted one above the other, the baskets being divided as shown to receive, plates, cups, glasses, silverware and the like. It is of course apparent that as the shaft is rotated and reciprocated simultaneously, the rack or cage 10 will move therewith.

Describing now the manner of actuating the shaft 7, on the latter is loosely mounted a sleeve or ring 12, which is confined against

vertical movement by fixed collars 13, secured to the shaft. The ring 12 has a stud projection 14 to which is pivotally secured a link 15, as shown at 16. The lower end of the link is pivoted as shown at 17 to a sliding frame 18 secured between guide ways 19. The guide ways 19 are secured to a bearing member 20. In this bearing member 20 is rotatably mounted a shaft 21 which is driven from motor 22, and pulley wheels 23 and 24 and pulley belt 25. On the shaft 21 is eccentrically mounted a disk 26 fixed to the shaft as shown at 27 and which works in a groove 28 in the upper end of the frame 18. The arrangement is such that as the shaft and disk rotate, the frame will be raised and lowered and thus the shaft vertically reciprocated. The reciprocating movement is a positive one controlled by cam disk 26. The lower end of the shaft 7 projects into a bearing collar 29 secured to the main frame, the arrangement being such that the shaft can both rotate and reciprocate in this bearing. On the shaft is mounted a gear 30, one side face of which instead of the periphery of the gear is provided with teeth 31. These teeth 31 are adapted to be engaged by a tooth or pin 32 secured by a disk 33 secured to the inner end of the shaft 21. The arrangement is such that as the tooth 32 engages the teeth of the gear 30, the shaft 7 will be intermittently rotated. In order to prevent the gear from reciprocating with the shaft, the gear is loosely keyed to the shaft, the arrangement being such that the shaft can vertically reciprocate independent of the gear but must rotate as the gears rotate.

It is to be understood that the invention is not limited in any way to the particular mechanism of reciprocating and rotating the shaft, and further that the tank is filled with hot water and cleaning fluid, which may be heated by burner 34 to any desired temperature. Suitable suds of course can be obtained by the use of soap or like substances. As the shaft 7 is reciprocated and rotated a sufficient agitation of the water will be obtained to thoroughly and uniformly clean the dishes. The shaft should be reciprocated and rotated at a relatively low speed. After the dishes have been washed, the soapy water will be drawn off, and the tank filled with hot rinsing water which can also be drawn off. By this manner of washing and rinsing the dishes, I am

able to subject them to sufficient heat to thoroughly sterilize them which is not the case where the dishes are washed by hand, as complete sterilization of the dishes is not possible unless the water is so hot that it is impossible to keep the hands in it.

I am aware that clothes washing devices are in use in which vacuum cups are reciprocated and rotated and I am also aware that various dish washing devices are on the market but I do not believe that any one has heretofore devised a construction for washing dishes such as is set forth in the foregoing specification and shown in the accompanying drawings.

I claim as my invention:

1. In a machine for washing dishes, the combination of a tank adapted to hold a cleansing liquid, a sleeve extending vertically from the bottom of the tank and provided at each end with a water tight bearing, a shaft extending through the sleeve

and projecting through said bearings, a dish containing receptacle detachably mounted on the shaft, means for supporting the lower end of the shaft, a motor, operative connections between the motor and shaft for causing vertical reciprocation of the shaft and operative connections between the motor and shaft for causing axial rotation of the latter whereby a regulated rotary and vertical movement is simultaneously given to said dish containing receptacle.

2. In an apparatus for washing dishes, the combination with a tank adapted to hold a cleansing liquid, of a shaft extending vertically in the tank, a motor, operative connections between the motor and shaft for causing a simultaneous axial and vertical reciprocation of the shaft and a dish containing receptacle detachably mounted on the upper end of the shaft.

JANE T. BELKNAP.